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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/705,174

11/11/2003

Michael Donovan Mitchell

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11/17/2006

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EXAMINER

KIM, SUN U

ART UNIT

PAPER NUMBER

1723

DATE MAILED: 11/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/705,174

Applicant(s)

MITCHELL ET AL.

Examiner

John Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6,8-10 and 12-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6,9,10 and 12-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>4/17/06</u> . | 6) <input type="checkbox"/> Other: _____  |

1. Examiner suggests applicants to update applications in continuity chain on page 1 of the specification as abandoned, patented with patent number, or pending.
2. Claims 3 and 14 are objected to because of the following informalities: Recitation of “group consisting of” should be followed “and” between last two groups. Appropriate correction is required.
3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-3, 5-6, 8-9 and 15 rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Cannon et al (US Pat. No. 6,881,348).

Regarding claims 1 and 15, Cannon et al teach a column i.e. housing having an inlet and an outlet and a filter material disposed in the column comprising a plurality of mesoporous activated carbon particles loaded with an cationic polymer (see col. 2, lines 41-54; col. 9, lines 17-41; Table 2: Ultracarb bituminous granular activated carbon (GAC) (mesoporous) loaded with PDADMAC (polydiallyldimethylammonium chloride)). Filter material of Cannon et al is substantially identical to the filter material claimed; therefore, the filter material of Cannon et al has inherent capabilities of claimed F-BLR and F-VLR. In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Regarding claims 2-3, Cannon et al teach a cationic polymer including polydiallyldimethylammonium chloride (see col. 2, lines 58-60). Regarding claim 5, the Ultracarb bituminous granular activated carbon (GAC) (mesoporous) in Table 2 of Cannon et al inherently has the claimed sum of the mesopore and the macropore volumes of the plurality of mesoporous activated carbon filter. Regarding claim 6, the filter material of Cannon et al is substantially identical to the filter material claimed; therefore, the filter material of Cannon et al has inherent capabilities of claimed BRI and VRI. In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Regarding claims 8-9, the filter material of Cannon et al is substantially identical to the filter material claimed; therefore, the filter material of Cannon et al has inherent properties of claimed single collector efficiency, filter coefficient, point of zero charge and ORP. In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

6. Claims 1-3, 5-6, 8-10 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitchell et al '854 (US Pat. No. 6,827,854) in view of Hou et al (US Pat. No. 6,565,749).

Mitchell et al '854 disclose a filter for providing potable water comprising: a housing having an inlet (24) and an outlet (26)(see Fig. 3; col. 1, line 66 – col. 2, line 17) and a filter material disposed within the housing comprising a plurality of mesoporous activated carbon filter particles having the sum of the mesopore and the macropore volumes of filter particles between about 0.2 mL/g and about 2.2 mL/g (see col. 8, lines 32-38) and the filter material having a F-BLR of greater than about 2 logs, and a F-VLR of greater than about 1 log (see col. 9, lines 20-37). Claims 1 and 15 essentially differ from the filter and of Mitchell et al '854 in reciting a cationic polymer coating on the mesoporous activated carbon particles. Hou et al teach a microorganism filter for removing microorganism from water comprising a cationic polymer coated onto the filter substrate (see abstract; col. 3, lines 15-22). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a coating of cationic polymers onto the mesoporous activated carbon particles of Mitchell et al '854 to attract microorganisms in water and effectively remove microorganisms from water as suggested by Hou et al (see col. 3, lines 15-22; col. 4, lines 22-31). Regarding claims 2-3, Hou et al teach cationic polymer including polyethylenimine (see col. 8, lines 33-39). Regarding claim 5, Mitchell et al '854 disclose a plurality of mesoporous activated carbon filter particles having the sum of the mesopore and the macropore volumes of filter particles between about 0.2 mL/g and about 2.0 mL/g (see col. 9, lines 38-58). Regarding claim 6, Mitchell et al '854 teach that the filter has BRI of greater than 99% and VRI of greater than 90% (see col. 9, lines 20-37). Regarding claims 8-9, the filter of Mitchell et al '854 inherently has claimed single-collector efficiency and filter coefficient as well as claimed point of zero charge and ORP because the filter of Mitchell et al '854 meets the properties of the mesoporous activated carbon particles

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including claimed F-BLR, F-VLR, BRI and VRI. Regarding claim 10, Mitchell et al '854 further teaches that the other filtering materials including carbon powders, activated carbon granules, activated carbon fibers, zeolites, etc. (see col. 11, lines 5-9). Claim 10 essentially differs from the filter of Mitchell '854 in reciting that a cationic polymer coating on the mesoporous activated carbon particles and the other filter materials. Hou et al teach a microorganism filter for removing microorganism from water comprising a cationic polymer coated onto the filter substrate (see abstract; col. 3, lines 15-22). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a coating of cationic polymers onto the mesoporous activated carbon particles and other filter materials of Mitchell et al '854 to attract microorganisms in water and effectively remove microorganisms from water as suggested by Hou et al (see col. 3, lines 15-22; col. 4, lines 22-31).

7. Claims 4 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitchell et al '854 in view of Hou et al as applied to claim 1 above, and further in view of Koslow (US Patent No. 6,630,016). Mitchell et al '854 in view of Hou et al teach the filter as described in above paragraph 6. Claim 4 essentially differs from the filter of Mitchell et al '854 in view of Hou et al in reciting a silver coating on the mesoporous activated carbon particles coated with a cationic polymer. Koslow teaches a filter comprising a silver, known biocide, coated or precipitated onto the filter particles (see col. 7, line 4 – col. 8, line 6). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate silver onto the cationic polymer coated mesoporous activated carbon particles of Mitchell et al '854 in view of Hou et al for effective biocide under conditions of high ionic strength as

suggested by Koslow (see col. 7, lines 53-64). Regarding claim 14, Hou et al teach cationic polymer including polyethylenimine (see col. 8, lines 33-39).

8. Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitchell et al '854 in view of Hou et al as applied to Claims 1 and 10, and further in view of Jagtoyen et al '906 (US 2004/0040906 A1). Mitchell et al '854 in view of Hou et al teaches the filter as described in above paragraph 6. Claims 12-13 essentially differ from the filter of Mitchell et al '854 in view of Hou et al in reciting a package comprising information that the filter or filter material provides. Jagtoyen et al '906 teach a package for containing the filter and wherein the package comprises information that the filter or filter material provides removal of pathogens, particularly viruses (see paragraph 281-283). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to pack the filter of Mitchell et al '854 in view of Hou et al in the package of Jagtoyen et al '906 to form a kit that informs the user about the benefits and importance of using the filter as suggested by Jagtoyen et al '906 (Par. 283).

9. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

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Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

10. Claim 1-6, 9-10, 12 and 14-15 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 4-12 and 16 of copending Application No. 11/101,130. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1, 4-12 and 16 of copending Application No. 11/101,130 fully suggests claim 1-6, 9-10, 12 and 14-15 of the instant application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

11. Claim 1-6, 9-10, 12 and 14-15 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 4-12 and 16 of copending Application No. 11/119120. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1, 4-12 and 16 of copending Application No. 11/119,120 fully suggests claim 1-6, 9-10, 12 and 14-15 of the instant application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

12. Applicant's arguments with respect to claims 1-6, 8-10 and 12-15 have been considered but are moot in view of the new ground(s) of rejection. Mitchell et al '854 in view of Hou et al, Koslow and Jagtoyen et al '906 teach claimed invention.



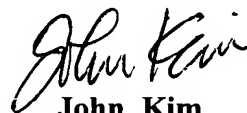
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13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References cited in PTO-892 teach various filter and filter materials.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Kim whose telephone number is 571-272-1142. The examiner can normally be reached on Monday-Friday 7 a.m. - 3:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Kim can be reached on 571-272-1142. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



**John Kim**  
**Primary Examiner**  
**Art Unit 1723**

JK  
November 15, 2006